

Report on Bachelor / Master Thesis

Institute of Economic Studies, Faculty of Social Sciences, Charles University in Prague

Student:	Lenka Šlegerová
Advisor:	PhDr. Lucie Bryndová
Title of the thesis:	Health technology assessment: case study on breast carcinoma treatment in the Czech Republic

OVERALL ASSESSMENT (provided in English, Czech, or Slovak):

Please provide your assessment of each of the following four categories, summary and suggested questions for the discussion. The minimum length of the report is 300 words.

The thesis is a nice exercise of a cost-effectiveness study comparing two lines of treatment of HER2+ metastatic breast carcinoma, namely the pertuzumab arm where the patients are treated with the combination of pertuzumab + trastuzumab + docetaxel; and the trastuzumab arm where the patients are treated with the combination of trastuzumab + docetaxel.

The thesis analyzed the data from the BREST clinical register comprising the total of 528 patients (274 in the treatment group, i.e. the pertuzumab arm; and 254 in the control group, i.e. the trastuzumab arm). The patients were followed for maximum 3.81 years in the pertuzumab arm, and 4.61 in the trastuzumab arm. The average follow-up was 1.64 years for both samples.

The thesis does not find any significant benefit from adding pertuzumab to the combination of trastuzumab arm on the Czech data, considering the increased costs it.

Contribution

The thesis contributes to the existing cost-effectiveness literature. The definition of cost-states for a transition analysis, instead of defining states based on health status is a brand new concept. The author argues the disadvantage of her new approach to be the fact that the exact day of progression is unknown, but rather it happens within an interval. However, I suggest that the exact day is irrelevant for the analysis, provided the exact cost is known. Another argument for the cost-states, the author proposes, is the fact that the exact day of progression is unknown with the health-states either. In both cases, progression is identified by the physician only. With the health-status definition, the definition of the exact day within the interval is likely to be very subjective. In any case, what matters here is the cost.

Methods

The thesis is very technical. The thesis had to deal with a lot of censoring. The methodology is well introduced, applied and interpreted. The thesis applies the Kaplan-Meier interpret and the Cox proportional hazard model and the Accelerated failure time model to estimate the survival function. The thesis interprets also for the effects of a number of covariates (age, cancer grade, the existence of metastases at the time of diagnosis, undergone surgery and the time elapsed between diagnosis and the start of the first therapy). Also, the quality of life is considered when interpreting the results

Literature

The literature is reviewed well and it fits nicely within the whole concept of the thesis.

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Manuscript form

The text is written in proper English, although sometimes tiny mistakes appear. Several typos were uncovered too.

The text is very technical. A reader would appreciate a more reader friendly interpretation of the results in addition to the excellent technical interpretation.

Summary and suggested questions for the discussion during the defense

The thesis is an excellent example of a master thesis. The drawbacks it contains stem primarily from the nature of the dataset. However, here we have to acknowledge that a limited analysis is always better than no analysis at all.

The drawbacks include: a short follow-up period of the patients, a relatively small sample. Random selection into the treatment and treated groups may under certain circumstances be questioned too. However, if we apply some assumption, randomization is fine.

If the data was linked to the insurance data, the analysis would be significantly enhanced, however, it is rather complicated in the Czech environment.

The text would certainly benefit from an additional non-technical interpretation of the results. I do not have any technical questions since all my questions were answered in the text so the questions for the defence may include the following:

What made you choose such a topic?

1. What made you chose such a topic?
2. How difficult was it to get hold of such a dataset since this is always the biggest problem for health economists?
3. Do you think that the Czech Republic would benefit from a legally binding cost-effectiveness threshold?

Given the quality of the thesis, although minor drawbacks are present (see above), **I suggest grade A (excellent).**

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SUMMARY OF POINTS AWARDED (for details, see below):

CATEGORY	POINTS
Contribution (max. 30 points)	30
Methods (max. 30 points)	30
Literature (max. 20 points)	20
Manuscript Form (max. 20 points)	15
TOTAL POINTS (max. 100 points)	95
GRADE (A – B – C – D – E – F)	A

NAME OF THE REFEREE:

DATE OF EVALUATION:

January 13, 2019

Jana Tolápková

Referee Signature

EXPLANATION OF CATEGORIES AND SCALE:

CONTRIBUTION: *The author presents original ideas on the topic demonstrating critical thinking and ability to draw conclusions based on the knowledge of relevant theory and empirics. There is a distinct value added of the thesis.*

<i>Strong</i>	<i>Average</i>	<i>Weak</i>
30	15	0

METHODS: *The tools used are relevant to the research question being investigated, and adequate to the author's level of studies. The thesis topic is comprehensively analyzed.*

<i>Strong</i>	<i>Average</i>	<i>Weak</i>
30	15	0

LITERATURE REVIEW: *The thesis demonstrates author's full understanding and command of recent literature. The author quotes relevant literature in a proper way.*

<i>Strong</i>	<i>Average</i>	<i>Weak</i>
20	10	0

MANUSCRIPT FORM: *The thesis is well structured. The student uses appropriate language and style, including academic format for graphs and tables. The text effectively refers to graphs and tables and disposes with a complete bibliography.*

<i>Strong</i>	<i>Average</i>	<i>Weak</i>
20	10	0

Overall grading:

TOTAL	GRADE
91 – 100	A
81 - 90	B
71 - 80	C
61 – 70	D
51 – 60	E
0 – 50	F